

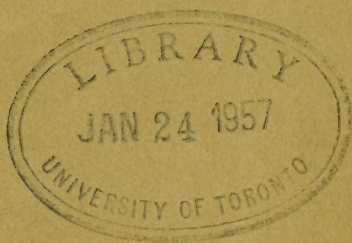


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New York (State)
Dept. of Public Works
The canal system

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N73
1917

THE CANAL SYSTEM OF NEW YORK STATE



Issued October 1, 1917
By W. W. WOTHERSPOON
Superintendent of Public Works



THE CANAL SYSTEM OF NEW YORK STATE

W. W. WOTHERSPOON, Superintendent of Public Works

HENRY D. ALEXANDER,
Deputy Superintendent

ALFRED M. O'NEILL,
Assistant to Deputy and
Chief Clerk

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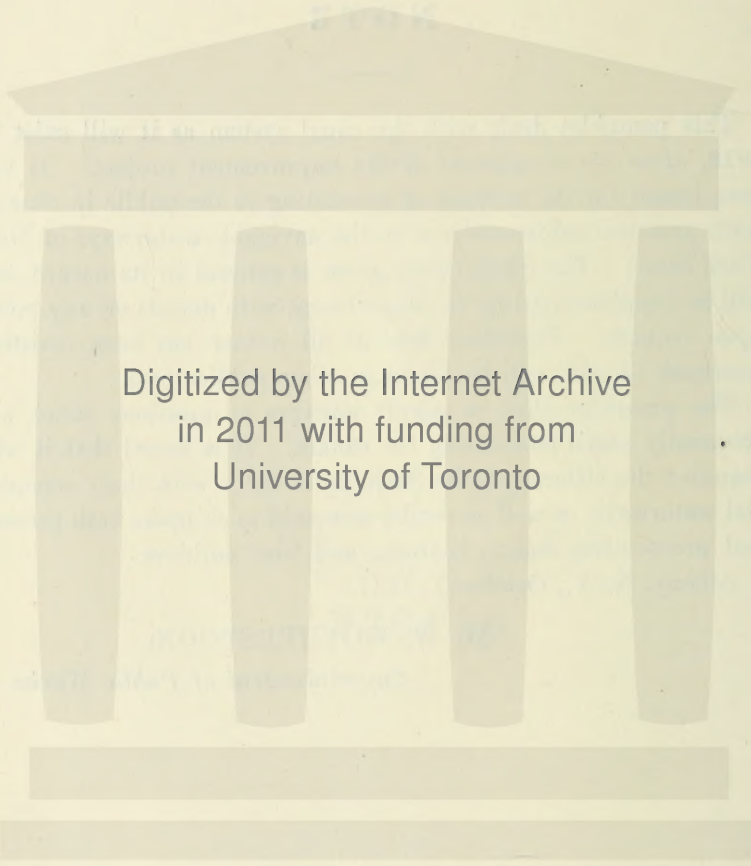
This pamphlet deals with the canal system as it will exist in 1918, after the completion of the improvement project. It has been issued for the purpose of presenting to the public in concise form practical information as to the navigable waterways of New York State. The information given is general in its nature, but will be supplemented by the department with details on any point upon request. Technical data of all nature has been omitted, inasmuch as such will be found in other publications.

The pamphlet aims to supply answers to questions which are frequently asked concerning the canals. It is hoped that it will acquaint the citizens of the State more fully with their commercial waterways, as well as render some aid to shippers both present and prospective, and to boatmen and boat builders.

Albany, N. Y., October 1, 1917.

W. W. WOTHERSPOON,

Superintendent of Public Works.



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THE CANAL SYSTEM OF NEW YORK STATE

Canals Free

Navigation of the canals of New York State is free, no charge of whatever kind being made for passage through the locks.

For the use of the terminal docks and the loading and unloading machinery and warehouses, a system of charges will be adopted. The dockage fees will be nominal, and charges for use of the mechanical appliances, as well as for space in warehouses, will be in such amounts only as to make, if possible, the terminals self-supporting.

General Description of the Canals

The canal system of New York State consists of the Erie canal, the Champlain canal, the Oswego canal, the Cayuga and Seneca canal, the Cayuga Lake inlet at Ithaca, the Black River canal, the Glens Falls feeder and the lakes, reservoirs and feeders connected therewith. The Shinnecock and Peconic canal, located in the County of Suffolk and connecting the waters of Shinnecock and Peconic Bays, also is officially a part of the canal system. The Superintendent of Public Works also has jurisdiction over the locks between the Saranac River and Lower Saranac Lake and between Lower Saranac Lake and Middle Saranac Lake, in the County of Franklin.

Connecting Waters

The eastern terminus of the improved Erie canal at Troy, and the southern terminus of the improved Champlain canal at Waterford, are reached from New York Bay and southern waters by means of the Hudson River. The first lock encountered by a northerly bound boat is that constructed and owned by the United States Government at Troy. The Hudson River south of Troy is under the jurisdiction of the United States Government.

The improved Erie canal connects with the Great Lakes, Buffalo on Lake Erie being its western terminus.

Another connection is made with the Great Lakes by means of the improved Oswego canal at Oswego on Lake Ontario. This port may be reached from the other Great Lakes by means of the Welland canal, which is under the jurisdiction of the Canadian Government.

The improved Champlain canal is connected with Lake Champlain by means of the Lake Champlain inlet at Whitehall. A boat of the proper dimensions may proceed to the St. Lawrence River from New York Bay via the Hudson River, the improved Champlain canal, Lake Champlain inlet, Lake Champlain, Richelieu River, Chambly canal and Richelieu River through St. Ours lock. Lake Champlain and its inlet are under the jurisdiction of the United States Government, and the Richelieu River and Chambly canal are under the jurisdiction of the Dominion of Canada.

There is no water connection between the Champlain canal and Lake George.

The Cayuga and Seneca Lakes are connected with the canal system by means of the improved Cayuga and Seneca canal.

General Route of the Erie Canal

The improved Erie canal (commonly known as the "Barge" canal) is the main waterway and extends across the State from Troy to Buffalo. Officially, the route commences at Congress Street, Troy, and follows the line of the Hudson River to Waterford, where the westward turn is made. From Waterford the line of the Mohawk River, canalized, is generally followed to a point beyond Little Falls. Westerly from this point the new channel follows the route of the old canal in part, but passes the northerly outskirts of the City of Utica on a new line, thence to the south of Rome, and then into and across Oneida Lake. Passing out of Oneida Lake, the Oneida River is used to its junction with the Seneca River at Three River Point; thence through the Seneca River to and through the Clyde River to a point east of Lyons; thence following the old canal deepened and enlarged to a point beyond Pittsford. Here the channel leaves the old route, crossing the Genesee River about a mile south of Rochester on a pool created by the construction of a dam, joining the line of the

old canal a few miles westerly and continuing thence in the former channel, deepened and widened, to and through Tonawanda Creek, canalized, to Tonawanda, where the Niagara River is entered and followed to Lake Erie at Buffalo. The length of the Erie canal is approximately 340 miles.

Albany, while not on the improved Erie canal proper, is situated on the Hudson River six miles below Troy. Ample terminal facilities have been provided here.

At Utica, a harbor of ample dimensions has been constructed, to which entrance is provided from the main canal channel by means of a junction lock.

At Syracuse, a harbor has been constructed at the southerly end of Onondaga Lake and an adequate channel has been provided from the main canal to it.

At Rochester, the pool created in the Genesee River will afford harbor facilities in that city.

At Buffalo, harbor and terminal facilities are provided in the Erie Basin and the Ohio Basin, including the Lackawanna Slip as far as Miami Street. In addition, the old Erie canal north of Wilkison Street will be retained without enlargement.

Portions of Old Canal Retained

A section of the old Erie canal has been retained for use, without enlargement, between its junction with the improved Erie canal at Waterford and Albany. Boats may enter this section of the canal at its northern end at Waterford, from the Hudson River by means of the upper or lower side cut locks at Watervliet, or at its southern end from the Hudson River at Albany. This canal passes through the City of Watervliet.

The section of the old canal between Mohawk and Rome also has been retained without enlargement. This passes through the City of Utica. It may be entered either at Mohawk or Rome by means of junction locks.

The dimensions of boats using the above sections of the old canal will be limited to the following: Length, 98 feet; width 17 feet, 5 inches; draft, 6 feet; and height above water line, 11 feet, 6 inches; excepting, however, that the draft of boats using the unimproved Champlain canal between Waterford and Watervliet is limited to 4 feet, 6 inches.

Cities and Villages

The municipalities on the line of the Hudson River below Troy are as follows:

New York,	Tarrytown,
Jersey City,	Tivoli,
Hoboken,	Saugerties,
Weehawken,	Germantown,
Yonkers,	Catskill,
Tarrytown,	Hudson,
Nyack,	Athens,
Ossining,	Stockport,
Harmon,	Coxsackie,
Haverstraw,	Newton Hook,
Peekskill,	Stuyvesant,
West Point,	New Baltimore,
Cold Spring,	Coeymans,
Cornwall Landing,	Schodack Landing,
Newburgh,	Castleton,
Beacon,	Rensselaer,
New Hamburg,	Albany,
Poughkeepsie,	Watervliet,
Highland,	Troy,
Kingston,	

The municipalities on the line of the improved Erie canal are as follows:

Troy,	Three Rivers,
Cohoes,	Syracuse,
Waterford,	Baldwinsville,
Crescent,	Montezuma,
Rexford Flats,	Clyde,
Schenectady,	Lyons,
Rotterdam Junction,	Newark,
Cranesville,	Port Gibson,
Amsterdam,	Palmyra,
Tribes Hill,	Macedon,
Fonda,	Wayneport,
Fultonville,	Fairport,
Yosts,	Pittsford,
Canajoharie-Palatine Bridge,	Rochester,
Fort Plain-Nelliston,	Greece,
St. Johnsville,	Spencerport,
Little Falls,	Adams Basin,
Herkimer,	Brockport,
Mohawk,	Holley,
Ilion,	Albion,
Frankfort,	Medina,
Utica,	Middleport,
Whitesboro,	Gasport,
Oriskany,	Lockport,
Rome,	Pendleton,
New London,	Martinsville,
Sylvan Beach,	North Tonawanda,
Cleveland (on Oneida Lake),	Tonawanda,
Constantia (on Oneida Lake),	Buffalo.
Brewerton,	

General Route of the Champlain Canal

The improved Champlain canal commences in the Hudson River at Waterford, where the improved Erie canal starts westward, and follows generally the channel of the Hudson River, canalized, as far northward as Fort Edward, where a new route has been established to Whitehall on the inlet of Lake Champlain. The length of the improved Champlain canal is approximately 61 miles.

At Schuylerville, a portion of the old Champlain canal has been retained without enlargement. By means of this spur boats 98' x 17' 5" x 5' may enter the Schuylerville Basin.

Cities and Villages

The municipalities on the line of the improved Champlain canal are as follows:

Waterford,
Mechanicville,
Schuylerville,
Northumberland,
Thompsons,
Fort Miller,

Fort Edward,
Smiths Basin,
Fort Ann,
Comstocks,
Whitehall,

The municipalities on Lake Champlain are as follows:

Crown Point,
Port Henry,

Plattsburg,
Rouses Point.

Glens Falls Feeder

The Glens Falls feeder has been retained without enlargement. This extends northerly from Glens Falls a distance of twelve miles and is connected with the channel of the improved Champlain canal by means of a junction lock at Fort Edward. The boats which may use the Glens Falls feeder are limited to the following maximum dimensions: Length, 90 feet; width, 14 feet; draft, 4 feet, 8 inches; height above water line, 8 feet.

General Route of the Oswego Canal

The improved Oswego canal branches northerly from the improved Erie canal at Three River Point and follows generally the line of the Oswego River, canalized, to Lake Ontario at Oswego. Its length is approximately 23 miles.

Cities and Villages

The municipalities on the line of the improved Oswego canal are as follows:

Three River Point,
Phoenix,
Fulton,

Minetto,
Oswego.

General Route of the Cayuga and Seneca Canal

The improved Cayuga and Seneca canal branches off in a southerly direction from the improved Erie canal at a point near Montezuma. The Cayuga branch follows the valley of the Seneca River to Cayuga Lake; thence through Cayuga Lake to the Cayuga Lake inlet at Ithaca. The Seneca branch follows the Seneca River in a westerly direction from the Cayuga branch near the foot of Cayuga Lake, and connects with Seneca Lake near Geneva; thence through Seneca Lake to Watkins, with an extension to Montour Falls. The length of the Cayuga and Seneca canal (exclusive of the lakes) is approximately 24 miles. Cayuga Lake is about 36 miles in length, and Seneca Lake is about 32 miles long.

Cities and Villages

The municipalities on the line of the improved Cayuga and Seneca canal are as follows:

Montezuma,
Cayuga,
Ithaca (on Cayuga Lake),
Seneca Falls,
Waterloo,

Geneva,
Watkins (south of Seneca Lake),
Montour Falls (south of Seneca Lake).

The Black River Canal

The Black River canal has been retained without enlargement and extends from its junction with the Erie canal at Rome north-erly to Carthage, although it is not navigable further north than Lyons Falls.

Dockage Facilities

At New York City public terminals or docks are being provided at many points. A complete list of the exact localities will be furnished upon application.

At Albany ample dockage facilities already have been provided by the State, and a warehouse, with loading and unloading machinery, is now being erected.

On Lake Champlain, State terminal docks have been built at Port Henry, Plattsburg and Rouses Point.

Terminal facilities also have been provided at Ithaca at the head of Cayuga Lake.

At practically all of the municipalities situated on the canal system, public docks will be found for the use of vessels, and many of these wharfs have been equipped with warehouses and derricks for the handling of freight. Information as to facilities at any specific point will be furnished upon request. Privately owned docks will be found at all points along the line of the Hudson River south of Albany. At many of the canal terminal docks convenient connections are had with railroad lines.

Dimensions of Improved Canals

The dimensions of the improved Erie, Oswego, Champlain and Cayuga and Seneca canals, so far as depth of channel and size of lock chambers are concerned, are uniform. The plans have sought to accomplish a minimum depth of channel of 12 feet throughout, and this practically has been accomplished. Such depth will be consistently maintained, although it must be borne in mind by all canal users that in the hundreds of miles of newly constructed channel, where natural conditions have been changed, erosion is constantly at work to lessen the navigable depth, and bars will inevitably form as the result of floods and excessive rainfall at the many streams entrances and elsewhere. Scour will be seen in the new river channels. Dredging operations will be progressed wherever such obstructions are discovered.

The width of the new canal channel varies according to the section traversed. Through canalized rivers and lakes the channel is at last 200 feet wide. Through rock cuts in land lines a minimum bottom width of 94 feet has been provided, and through earth sections the minimum width at the bottom of the channel is 75 feet.

No fixed bridges have been permitted to be constructed over the new canal channel at less than $15\frac{1}{2}$ feet above the level of the water when at maximum navigable stage.

The dimensions of the new locks on all improved canals have been made identical, so far as practicable. The length of the

lock chamber from the lower gate to the breast wall is 310 feet, which, considering the operation of the gates, will permit the locking of a barge 300 feet long. The width of the lock chambers has been planned at 45 feet, and this has practically been accomplished. The width of the United States Government lock at Troy, which is located at the eastern terminus of the canal system is 44.44 feet. Such width, therefore, must govern.

Maximum Dimensions of Boats on Improved Canals

As to the largest vessel which may pass through the improved channels, it will be seen that its length must not exceed 300 feet, nor its width 42 feet.

By reason of the necessity of having a fair cushion of water underneath the keel of a heavily laden barge, and to insure a fair margin of safety on account of the possibility of obstructions existing in a channel of so great a length, the greatest draft to be permitted boats for the present and early future will be $9\frac{1}{2}$ feet while the boat is in motion. It is important that this dimension be not exceeded for the additional reason that at the present time the depth of the Hudson River channel between Troy and Albany does not exceed 10 feet at ordinary low tide.

The height of vessels above the water line must not exceed 15 feet, in order that the same may pass safely under the fixed bridges.

Size of Boats

As shown by the above, it is possible for a boat $300' \times 42' \times 9\frac{1}{2}'$, with a height of 15 feet above the water line, to pass through either of the new canals. Such boat would have a carrying capacity of say 2,800 tons.

From observations made, it is likely that a barge of such maximum dimensions would be difficult to handle in portions of the canal channel where the width is restricted. Furthermore, special regulations would need to be observed by such boats in the sections of the canal where a 75-foot width of channel only has been provided. The commercial possibilities for general use for so large a boat are also to be doubted at the present time. It is not expected, therefore, that boats will be constructed of the maximum dimensions, nor is it believed that craft of such size would prove profitable to their owners for general use.

As to what will be the exact size of a barge most suitable for use on the new waterways, is a question which may only be given a definite answer when actual experience is had with the new conditions. For the benefit of those interested in the subject as boat builders or otherwise, the following suggestions as to dimensions of barges are offered, the figures given being intended as approximate only:

(1) A barge 150 feet long; 21 feet wide; draft, 8 feet, carrying capacity say 600 tons. Such craft could be operated in fleets of four; and if one of the four were equipped with power, the fleet could pass through a lock at one time. In navigating the canal the power boat would push one barge and tow two. The freight-carrying capacity of the power boat would not be greatly less than that of the barges.

(2) A barge 150 feet long, 22 feet wide, with approximately 12-foot sides, carrying capacity say 900 tons. This type has been suggested by some for the carrying of bulky freight.

(3) A barge 102 feet long, 21½ feet wide, with 12-foot sides, carrying capacity say 630 tons.

(4) A barge 108 feet long 21 feet wide, with 7 or 8-foot side, carrying capacity say 450 tons.

Barges of either of the two types last named might be operated in fleets consisting of a steam barge and four consorts. The consorts might be of the same type as the steamer, but, of course, would have somewhat more room for the carrying of freight. Should the barge be limited to a draft of 6 feet, it would be available for use on the Canadian waterways north of Lake Champlain and might carry freight to and from the St. Lawrence River.

(5) The largest type of boat that has been seriously suggested is one 250 feet long and from 35 to 40 feet wide, with 12-foot sides, carrying capacity say 2,500 tons.

(6) For the carrying of merchandise between cities on the canal, or what is known as "packet freight", a steam barge would be found suitable, with its carrying space mainly above its deck. Such craft might be of any of the dimensions above given, excepting that, for convenience of operation, it should not exceed 250 feet in length, nor 35 feet in width.

As already stated, the dimensions suggested above are to be taken as tentative only and should not be adopted by boat builders

without careful study as to their practical application to their needs.

The tonnage capacities given are to be considered also as approximate. After computing the total cubic feet of the vessel, it has been assumed that a unit of 100 cubic feet is equal to one net ton; and that the cargo capacity is two and one-half times the net tonnage.

Type of Boats

Every boat navigating the canals must have a rounded bow. The use of the rectangular shaped barges is forbidden owing to the fact that they are incapable of being properly managed while passing through the locks. Each boat must also be equipped with a rudder. An anchor of suitable weight should be a part of the barge's equipment, together with a sufficient length of rope.

Material for Boat Construction

In addition to timber, both steel and concrete have been suggested for use in building barges. Heretofore, with the exception of one fleet, the boats on the Erie canal have been constructed of wood. These have proved satisfactory.

The one exception was a single fleet of steel canal boats which navigated the canals with much profit to their owner some years ago and were withdrawn to foreign waters. In such case the steel construction was highly satisfactory.

So far as is known, no concrete barges have as yet been used on the Erie canal. The use of this material is being advocated by some, who believe that it is advisable in view of the present scarcity of timber and steel.

Some boat builders plan to use their craft elsewhere during the closed season of canal navigation. In such cases a steel barge 250 feet long has been considered most suitable.

Motive Power

No towing path having been provided on the new canals, boats must have some mechanical motive power. This may be in the form of a towing tug or a freight-carrying power boat.

Speed of Boats

In the improved canal channels the speed limit of boats shall not exceed six miles per hour, excepting in canalized rivers and

lakes; and on canalized rivers and lakes the limit of speed shall depend upon the conditions of traffic, but in no event shall it exceed 10 miles per hour. On the unimproved canal routes, or on sections or portions of canals having a bottom width of 50 feet or less, a speed of four miles per hour must not be exceeded.

Regulations

Rules and regulations governing canal navigation have been adopted and issued by the Superintendent of Public Works. Copies may be obtained upon application to him. Every boat entering the canals must secure a clearance, which may be obtained at the office of the Collector of Canal Statistics at either Troy, Buffalo, Whitehall or Oswego.

Passenger Boats

Every vessel propelled by machinery and engaged in carrying passengers for hire, or towing for hire, must submit itself for examination to the inspectors of steam and motor vessels employed by the Superintendent of Public Works. The condition of such vessels and their apparatus, machinery and equipment must comply with the requirements of the State Navigation Law. Masters, pilots and engineers of such boats also must be licensed. Copies of the Navigation Law containing the requirements for such vessels may be obtained on application to the Superintendent of Public Works.

Pleasure Boats

Permits to pleasure boats to navigate the canals will be issued upon application to the Superintendent of Public Works, accompanied by information as to the name and address of the owner, the name of the boat, its type and dimensions. Navigation permits are not issued to rowboats, canoes or other such small craft, even when equipped with mechanical power. Such boats may use the canals without navigation permits, but the locks will not be operated for their passage.

Aids to Navigation

The safe and convenient navigation of canalized rivers and lakes where great width of water exists, requires familiarity with

the channel. Charts showing the canal channel through such locations may be obtained from the Superintendent of Public Works at the cost of producing them. On sections of the canal where no charts are provided, none is deemed necessary.

Navigation Period

The canals are available for use during the 24 hours of the day. At nighttime lights are maintained to mark the channel where such aid is deemed necessary.

The length of the navigation season will be about seven months, being dependent upon weather conditions. Navigation will be declared open as early as physical conditions make possible, and the season will continue until the waterways are closed by ice. After the completion of the entire improvement project, it is possible that the waterways may be made ready for boats in April. Experience has shown that climatic conditions will prevent their use after December 1st.

State Traffic Bureau

Through the canal traffic agent, the Superintendent of Public Works is prepared to furnish accurate information relative to the transportation of freight by water, or by rail and water, where the New York State waterways may provide all or part of the route.

Information and data relative to canal transportation, transportation of freight to and from localities which are feeders to the canal system and rates and transportation costs to and from points beyond the limits of the canal system by water and by railroad, when a portion of the route may be by canal, has been collected by the Department. Such data, with all necessary information relative to canal transportation, will be furnished upon application without cost. Shippers and boatmen are urged to avail themselves of the Department's services in this respect.

Distance Tables

In the following tables will be found the number and location of locks on the canals, as well as the various cities and villages, with the distances between all points:

HUDSON RIVER AND IMPROVED ERIE CANAL

	Place to place	From New York	From Buffalo
New York City, pier 5 and 6, East river.....		.00	506.72
Dobbs Ferry.....	23.80	23.80	482.92
Erie railroad docks.....	2.20	26.0	480.72
Tarrytown.....	2.30	28.3	478.42
Nyack.....	.9	29.2	477.52
Ossining.....	4.6	33.8	472.92
Haverstraw.....	4.0	37.8	468.92
Peekskill.....	7.1	44.9	461.82
West Point.....	7.4	52.3	454.42
Cold Spring.....	2.6	54.9	451.82
Cornwall Landing.....	2.6	57.5	449.22
Newburgh.....	3.6	61.1	445.62
Fishkill.....	.3	61.4	445.32
New Hamburg.....	6.4	67.8	438.92
Poughkeepsie.....	7.9	75.7	431.02
Kingston, on side line 1.2 miles long.....	16.4	92.1	417.02
Rhinecliff.....	15.3	91.0	415.72
Saugerties.....	10.5	101.5	405.22
Catskill.....	10.6	112.1	394.62
Athens.....	4.1	116.2	390.52
Hudson.....	.2	116.4	390.32
Coxsackie.....	6.9	123.3	383.42
New Baltimore.....	6.4	129.7	377.02
Cocoymans.....	2.0	131.7	375.02
Castleton.....	4.0	135.7	371.02
Rensselaer, Ferry street.....	7.7	143.4	363.32
Albany, Madison avenue.....	0.4	143.8	362.92
Albany terminal.....	1.0	144.8	361.92
Rensselaer, Forbes avenue.....	5.1	149.9	356.82
Troy, Washington street terminal.....	.2	150.1	356.62
Watervliet, at ferry.....	.4	150.5	356.22
Troy, upper terminal.....	1.43	151.93	354.79
Troy, Federal lock.....	1.67	153.60	353.12
Cohoes terminal, Ontario street.....	.78	154.38	352.34
Mohawk river below Union bridge.....	.12	154.5	352.22
Waterford—junction Erie and Champlain canals.....	.7	155.2	351.52
Waterford, Third street terminal.....	.28	155.48	351.24
Lock No. 2, Erie canal.....	.62	156.1	350.62
Lock No. 3, Erie canal.....	.16	156.26	350.46
Lock No. 4, Erie canal.....	.28	156.54	350.18
Lock No. 5, Erie canal.....	.63	157.17	349.55
Lock No. 6, Erie canal.....	1.33	158.50	348.22
Guard gate No. 2.....	2.39	160.89	345.83
Crescent terminal.....	2.28	163.17	343.55
Dunsbach Ferry.....	2.80	165.9	331.90
Fort's Ferry.....	1.47	167.37	339.35
Vischer's Ferry.....	3.83	171.2	335.52
Lock No. 7.....	4.6	175.8	330.92
Rexford (aqueduct).....	2.4	178.2	328.52
Schenectady terminal.....	4.40	182.60	324.12
Lock No. 8, Scotia.....	.42	183.02	323.70
Rotterdam Junction (west).....	1.38	184.40	322.32
Lock No. 9.....	4.40	188.80	317.92
Hoffman's Ferry (north shore).....	.38	189.18	317.54
Pattersonville (south shore).....	2.72	191.90	314.82
Cranesville.....	1.33	193.23	313.49
Lock No. 10, Cranesville.....	1.77	195.00	311.72
Amsterdam terminal.....	2.75	197.75	308.97
Lock No. 11, Guy Park.....	.05	197.80	308.92
Akin.....	5.10	202.90	303.82
Fort Hunter, bridge.....	4.58	207.48	299.24
Lock No. 12, Tribes Hill.....	.62	208.10	298.62
Fultonville (south shore).....	.18	208.28	298.44
Fonda (north shore).....	3.42	211.7	295.02
Lock No. 13, Yosts.....			
Randall P. O. (south shore).....			
Yosts (north shore).....			
Sprakers Ferry.....			

HUDSON RIVER AND IMPROVED ERIE CANAL — (Continued)

	Place to place	From New York	From Buffalo
Canajoharie terminal.....	3.10	{ 214.8 }	201.92
Palatine Bridge (north shore).....		214.8	
Lock No. 14.....	.58	215.38	201.34
Fort Plain terminal.....		{ 218.3 }	
Nelliston (north shore).....	2.92	218.3	288.42
Lock No. 15.....	.43	218.73	287.99
St. Johnsville terminal.....	5.25	223.98	282.74
Lock No. 16.....	1.46	225.44	281.28
Mindenville bridge.....	.26	225.70	281.02
Guard gate No. 3, Erie, Indian Castle.....	3.1	228.8	277.92
Lock No. 17, Little Falls.....	4.41	233.21	273.51
Lift bridge, Little Falls.....	.71	233.92	272.80
Guard gate No. 4, Little Falls.....	.18	234.10	272.62
Terminal, Little Falls.....	.30	234.4	272.32
Lock No. 18, Jacksonburg.....	3.00	237.4	269.32
Bridge No. 139, Jacksonburg.....	.30	237.7	269.02
Mohawk guard gate No. 5.....	3.83	{ 241.53 }	
Mohawk Junction lock, Utica line.....		241.53	265.19
Herkimer terminal.....	.17	241.7	265.02
Ilion terminal.....	1.80	243.5	263.22
Frankfort terminal.....	2.90	246.4	260.32
Lock No. 19.....	3.00	249.4	257.32
Utica terminal lock.....	7.20	256.6	250.12
Utica terminal (side line).....	.70	257.30	250.8
Whitesboro, bridge.....	2.20	258.80	247.92
Lock No. 20.....	.88	259.68	247.04
Oriskany, bridge.....	2.42	262.1	244.62
Guard gate No. 6, Erie canal.....	4.20	266.3	240.42
Rome terminal.....	3.00	269.3	237.42
Guard gate No. 7, Erie canal.....		{ 269.45 }	
Junction lock to Utica line.....	.15	269.45	237.27
Junction lock to Black River canal.....	.10	269.55	237.17
New London junction lock, Syracuse line.....	6.31	275.86	230.8
Lock No. 21.....	2.04	277.90	228.82
Lock No. 22.....	1.35	279.25	227.47
Sylvan Beach (north side).....	4.35	283.60	223.12
Cleveland.....	8.5	292.7	216.02
Constantia.....	6.6	299.3	209.42
Fort Brewerton (north shore).....	7.5	306.2	201.92
Fort Brewerton (north shore).....	21.2	304.8	201.92
Brewerton terminal.....	.2	305.0	201.72
Lock No. 23.....	2.9	307.9	198.82
Oak Orchard, bridge.....	2.9	310.8	195.92
Oswego canal junction, east (Three River Point).....	3.81	314.61	192.11
Three River Point dock.....	.09	314.7	192.02
West Junction.....	.2	314.9	191.82
Belgium, bridge.....	1.8	316.7	190.02
Cold Spring bridge, east junction Syracuse branch.....	4.70	321.4	185.32
Long Branch, dock.....	.95	322.35	185.77
Lake entrance, side line.....	.45	322.8	186.22
Liverpool.....	2.00	324.8	188.22
Syracuse terminal.....	3.40	328.20	191.62
West Junction, Syracuse branch.....	.50	321.9	184.82
Lock No. 24, Baldwinsville.....	4.55	326.65	180.07
State ditch, bridge.....	8.80	335.45	171.27
Jones Point, Cross Lake entrance.....	1.73	337.18	169.54
Iron bridge, Jordan.....	2.12	339.3	167.42
Bontas bridge.....	.87	341.17	165.55
Weedsport terminal.....	2.03	343.2	163.52
Port Byron (free bridge).....	4.10	347.3	159.42
Fox Ridge (Campbell's bridge).....	3.50	350.8	155.92
Montezuma (aqueduct).....	4.58	355.38	151.34
Cayuga and Seneca canal, east junction.....	.52	355.9	150.82
Cayuga and Seneca canal, west junction.....	.30	356.2	150.52
Lock No. 25, May's Point.....	1.20	357.4	149.32
Lock No. 26.....	5.84	363.24	143.48
Clyde, viaduct.....	2.36	365.6	141.12
Lyons terminal.....	9.60	375.2	131.52
Lock No. 27.....	.10	375.3	131.42

HUDSON RIVER AND IMPROVED ERIE CANAL — (Concluded)

	Place to place	From New York	From Buffalo
Lock No. 28-A.....	1.27	376.57	130.15
Poor House.....	1.08	377.65	129.07
Lock No. 28-B.....	2.85	3 0.5	126.22
Newark terminal.....	.40	380.9	125.82
Port Gibson.....	3.40	384.3	122.42
Guard gate No. 8.....	1.68	385.98	120.74
Palmyra, lock No. 29.....	4.22	390.2	116.52
Macedon, lock No. 30.....	3.00	393.2	113.52
Wayne port.....	3.00	396.2	110.52
Fairport dock.....	4.63	{ 400.83 }	105.89
Lift bridge No. 2.....	3.27	404.1	102.62
Guard gate No. 9.....	.64	404.74	101.98
Bushnell's Basin, bridge.....	1.66	406.4	100.32
Cartersville, bridge.....	.10	406.50	100.22
Guard gate No. 10.....	1.20	407.7	99.02
Pittsford, dock wall.....	2.10	409.8	96.92
Lock No. 32.....	.80	410.6	96.12
Lock No. 33.....	3.60	414.2	92.52
Guard lock, east.....	.50	414.7	91.02
Centr of river.....			
Rochester terminal (side line).....	3.20	417.9	95.22
Guard lock, west.....	.50	415.2	91.52
South Greece.....	6.60	421.8	84.92
Guard gate No. 11.....	2.30	424.1	82.62
Spencerport terminal.....	1.30	{ 425.4 }	81.32
Lift bridge No. 3.....		{ 425.4 }	
Adams Basin, dock.....	2.9	{ 428.3 }	78.42
Adams Basin, lift bridge No. 4.....	4.61	{ 432.91 }	73.81
Brockport, lift bridge No. 5.....	.19	433.1	73.62
Brockport, lift bridge No. 6.....	.90	434.0	72.72
Guard gate No. 12, Erie canal.....	3.7	{ 437.7 }	69.02
Holley terminal.....		{ 437.7 }	
Holley lift bridge No. 7.....	.63	438.33	68.39
Guard gate No. 13, Erie canal.....	2.37	440.7	66.02
Hulberton lift bridge No. 8.....	6.40	447.1	59.62
Albion, lift bridge No. 9.....	.20	447.3	59.42
Albion, lift bridge No. 10.....	1.1	448.4	58.32
Guard gate No. 14, Erie canal.....	2.2	450.6	56.12
Eagle Harbor, lift bridge No. 11.....	3.0	453.6	53.12
Knowlesville, lift bridge No. 12.....	3.2	456.8	49.92
Guard gate No. 15.....	1.0	457.8	48.92
Medina terminal.....	.4	458.2	48.52
Medina, lift bridge No. 13.....	3.21	461.41	45.31
Guard gate No. 16, Erie canal.....	1.49	462.9	43.82
Middleport, lift bridge No. 14.....	4.9	467.8	38.92
Guard gate No. 17.....	.4	468.2	38.52
Gasport, lift bridge No. 15.....	5.77	473.97	32.75
Lockport, lift bridge No. 16.....	.23	474.2	32.52
Lockport, lift bridge No. 17.....	.10	474.3	32.42
Lockport, lower terminal.....	.50	474.8	31.92
Locks No. 34 and 35.....	.50	475.3	31.42
Upper terminal, Lockport.....	4.0	479.3	27.42
Guard gate No. 18, Erie canal.....	2.2	481.5	25.22
Pendleton, bridge.....	6.4	487.9	18.82
Martinsville.....	4.4	{ 492.3 }	14.42
Tonawanda terminal.....		{ 492.3 }	
North Tonawanda terminal.....	12.43	504.73	1.99
Buffalo, Erie Basin.....	1.99	506.72	0.00
Buffalo, Ohio Basin.....			

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CHAMPLAIN CANAL

	Distances between points	From New York	From Canadian line
Federal lock at Troy.....		151.93	169.57
Cohoes terminal, Ontario street.....	1.67	153.60	167.90
Waterford junction in river.....	.78	154.38	167.12
Waterford, Union bridge.....	.54	154.92	166.58
Lock No. 1.....	2.88	157.80	166.70
Lock No. 2.....	3.90	161.7	159.80
Mechanicville terminal.....	1.90	163.6	157.90
Lock No. 3.....	.63	164.23	157.27
Lock No. 4.....	1.83	166.96	155.44
Stillwater, bridge.....	.42	166.48	155.02
Bemis Heights.....	2.82	169.30	152.20
Lock 5, Junction lock.....	11.06	180.36	141.14
Junction lock to Schuylerville Basin.....	1.2	181.56	142.34
Thomson terminal.....	1.04	181.4	140.10
Northumberland, bridge.....	.10	181.5	140.00
Lock No. 6, Fort Miller.....	.50	184.0	137.50
Guard Gate (Crocker's Reef).....	2.07	186.07	135.43
Lock No. 7, Fort Edward.....	5.17	191.24	130.26
Fort Edward terminal, side line.....	1.00	192.24	131.26
Lock No. 8.....	2.06	193.30	128.20
Dunham's Basin, bridge.....	1.70	195.00	126.50
Lock No. 9.....	1.10	199.10	122.40
Smith's Basin, bridge.....	.44	199.54	121.96
Fort Ann, bridge.....	3.76	203.30	118.20
Comstock, bridge.....	3.94	207.24	114.26
Lock No. 11.....	.96	208.2	113.30
Whitehall terminal.....	6.30	214.5	107.00
Whitehall lock No. 12.....	.29	214.79	106.71
Ticonderoga.....	22.31	237.1	84.40
Crown Point.....	8.30	245.4	76.10
Port Henry.....	8.10	253.5	68.00
Essex.....	21.00	274.5	47.00
Burlington.....	11.00	285.5	36.00
Port Kent.....	3.00	288.5	33.00
Plattsburg.....	12.00	300.5	21.00
Rouses Point.....	19.30	319.8	1.70
Canadian line.....	1.70	321.5	00.00

OSWEGO CANAL

	Distances between points	From New York	From Oswego
Oswego canal, junction east (Three River Point).....	3.81	314.61	23.79
Lift Bridge No. 1, Oswego.....	2.29	316.9	21.50
Phoenix, lock No. 1.....	.10	317.0	21.40
Hinmansville, bridge.....	3.2	320.2	18.20
Fulton, lock No. 2.....	6.3	326.5	11.90
Fulton, terminal.....	.2	326.7	11.70
Fulton, lock No. 3.....	.35	327.05	11.35
Battle Island cut.....	3.50	330.55	7.85
Minetto, lock No. 5.....	2.95	333.5	4.90
Oswego, lock No. 6, High dam.....	3.3	336.8	1.60
Oswego, lock No. 7.....	.36	337.16	1.24
Oswego, lock No. 8.....	.54	337.70	.70
Oswego, east terminal.....	.30	338.00	.40
Oswego, Lake terminal.....	.10	338.40	00

BLACK RIVER CANAL

	DISTANCE FROM —		
	Place to place	Rome	Boonville
Rome.....			25
Ridge Mills.....	2	2	23
Lock No. 7.....	3	5	20
Walworth's Storehouse.....	1	6	19
Westernville.....	3	9	16
Wells Brook Aqueduct.....	2	11	14
Stringers' Creek.....	2	13	12
Lansing Kill.....	1	14	11
Lock No. 31.....	2	16	9
Lansing Kill dam or feeder.....	1	17	8
Lower Falls, Lansing Kill.....	2	19	6
Upper Falls, Lansing Kill.....	2	21	4
Lock No. 70.....	2	23	2
Boonville.....	2	25	
Sugar river.....	3	28	3
Little Falls, Black river.....	1	29	4
Port Leyden.....	3	32	7
Lock No. 91.....	1	33	8
Lyon Falls.....	2	35	10
Hawkinsville, on feeder (three miles from Boonville).....		28	3
A. Lee's, on feeder.....	2	30	5
R. B. Miller's, on feeder.....	1	31	6
State dam on feeder.....	4	35	10
Head of reservoir.....	2	37	12

CAYUGA AND SENECA CANAL

	Place to place	From New York City	From Buffalo
Albany terminal.....		144.80	361.92
Lock 2, Erie canal.....	10.40	155.20	351.52
East junction, Erie and Cayuga and Seneca canal.....	200.88	355.90	150.82
West junction, Erie and Cayuga and Seneca canal.....	0.32	356.20	150.52
Lock 1 (Mud lock).....	4.07	359.97	154.59
Ithaca, terminal.....	37.83	397.80	192.42
Lock 1, (Mud lock).....		359.97	154.59
Seneca Falls.....	4.38	364.35	158.97
Waterloo.....	3.71	368.06	162.68
Geneva.....	6.94	375.00	169.62
Watkins.....	32.80	407.80	202.42
Montour Falls, Ayer street.....	2.50	410.30	204.92

DISTANCES, ALBANY TO MONTREAL BY WAY OF HUDSON RIVER,
LAKE CHAMPLAIN AND RICHELIEU AND ST. LAWRENCE RIVERS
(APPROXIMATE DISTANCES)

	Place to place	Total distances
Albany.....		
Whitehall.....	70	70
Rouses Point.....	105	175
St. John's (canal entrance).....	25	200
Chambly Basin.....	12	212
St. Ours Lock.....	32	244
Sorel.....	14	258
Montreal.....	46	304

NEW YORK STATE THE IMPROVED CANAL SYSTEM

ISSUED OCTOBER 1ST, 1917

M. McQuinn

Superintendent of Public Works.

EXPLANATION

IMPROVED CANALS

UNIMPROVED CANALS

STATE TERMINALS

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NEW YORK CITY AND VICINITY



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New York (State)
Dept. of Public Works
The canal system

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